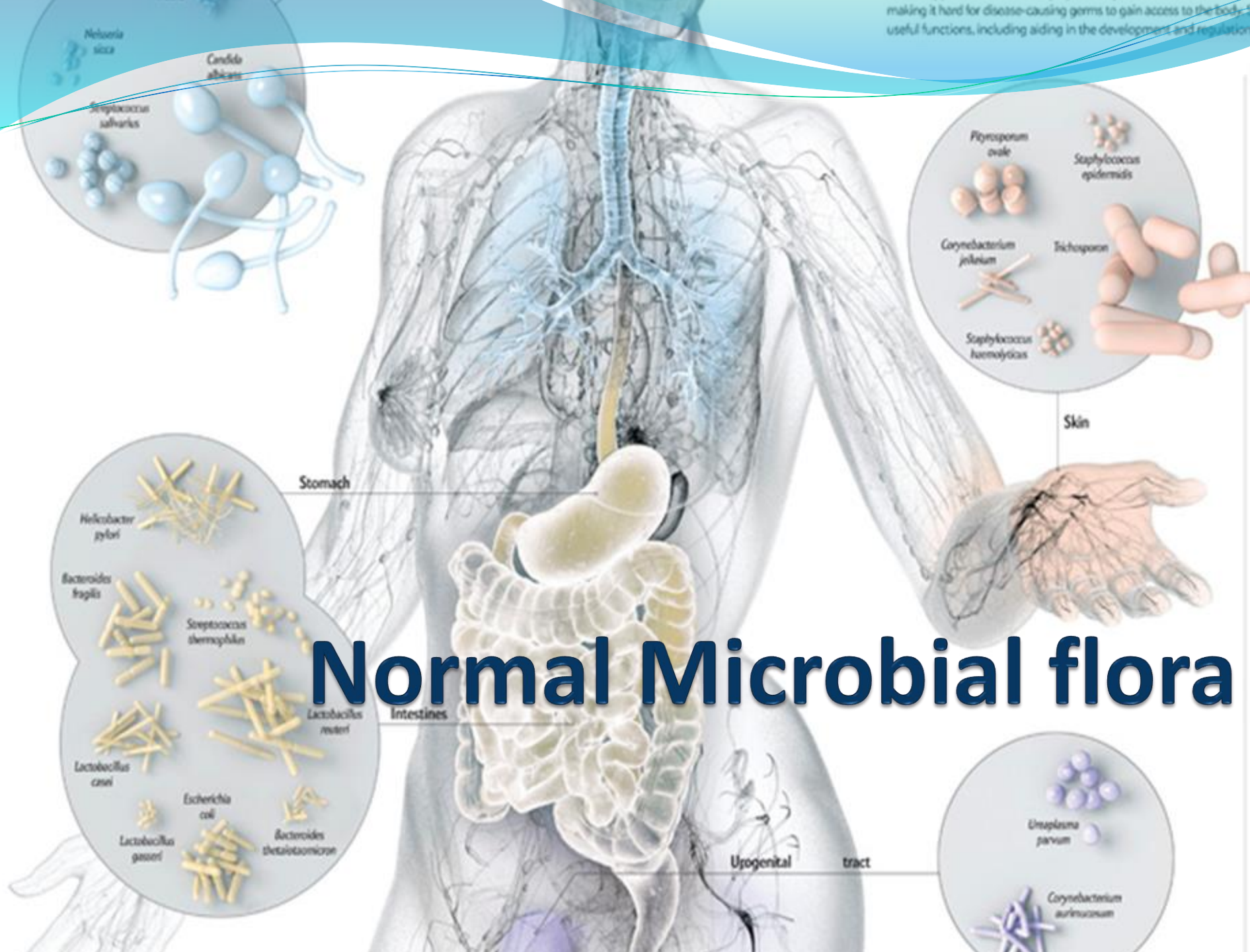


making it hard for disease-causing germs to gain access to the body's useful functions, including aiding in the development and regulation



Normal Microbial flora

Definitions

Indigenous flora

microorganisms native or belonging naturally to a region.

Colonization

establishment of a site of reproduction of microbes on a person without necessarily resulting in tissue invasion or damage

Normal Microbial Flora

- **Resident Flora (Indigenous flora)**
 - Microbes that are always present
- **Transient Flora**
 - Microbes that live in or on your body for a period of time (hours, days, weeks, months) then move on or die off

Symbiotic Relationship

1. Neutralism

2. Mutualistic

- *Escherichia coli*
- Protozoa in Termites

2. Commensalistic

- *Demodex*

3. Parasitism

- *Trypanosoma gambiense*

4. Opportunistic

Commensalistic

- We have no Commensalistic relationships with Bacteria
- If Bacteria are in or on our body, they are either helping us (Microbial Antagonism) or harming us.

Opportunistic

Especially in hosts rendered susceptible by:

1. Immuno-suppression (AIDS)
 2. Radiation therapy & Chemotherapy
 3. Perforated mucous membranes
 4. Rheumatic heart disease...etc.
- *Escherichia coli* - normally in our digestive tract where it causes no problems, but if it gets into the urinary tract it can become pathogenic.
 - *Staphylococcus aureus* – commonly found in the upper respiratory tract, but if it gets into a wound or a burn it can become pathogenic

Normal flora

1. A diverse microbial flora

Human body Area: the skin and mucous membranes

Number: 10^{14} bacteria \rightarrow 10^{13} host cells

2. Normal flora may:

- a. Aid the host

- b. Harm the host (in sometimes)

3. Viruses and parasites \rightarrow NOT normal microbial flora

Most investigators consider that they are not commensals and do not aid the host.

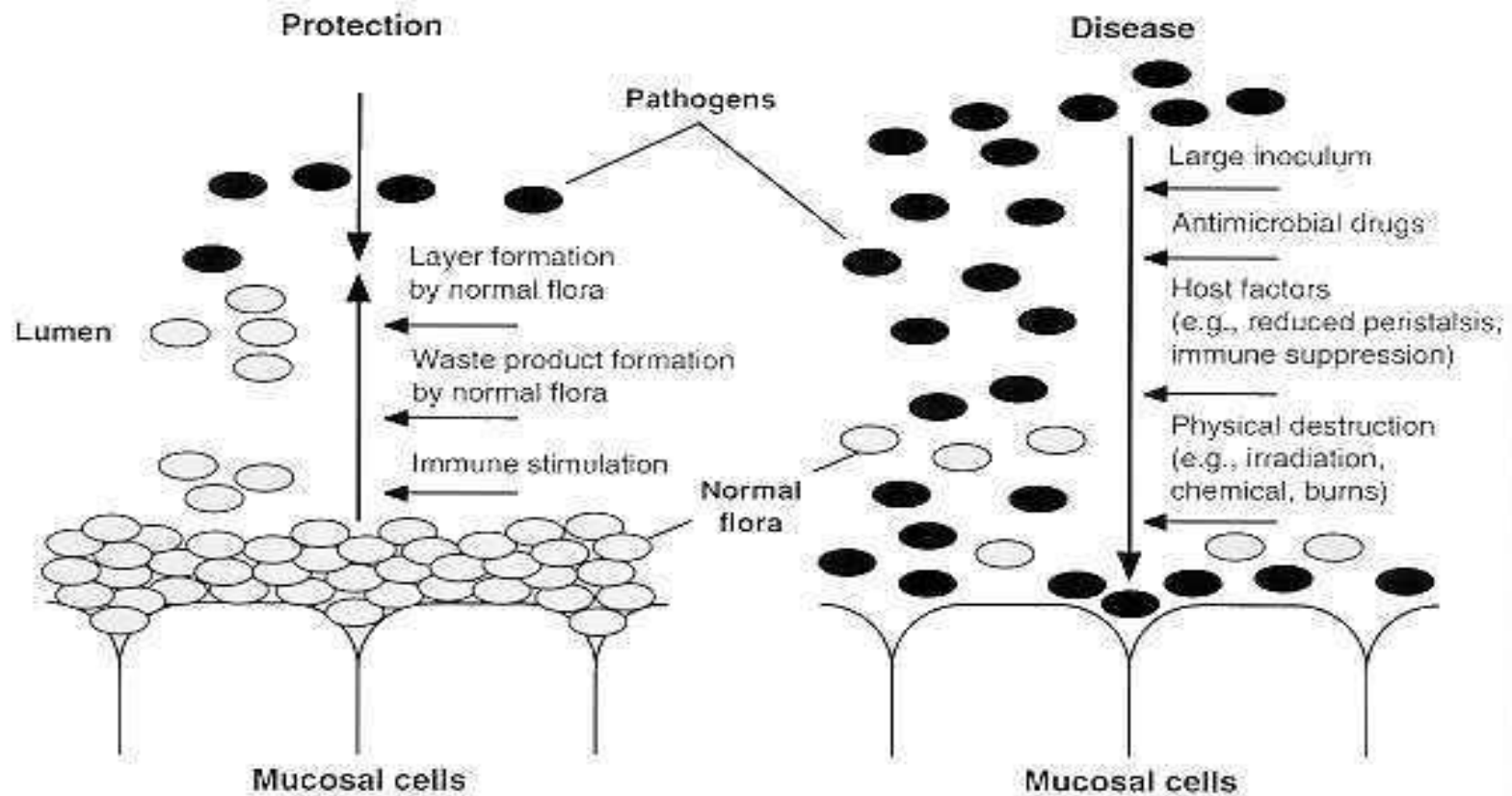
Significance of normal flora

The normal flora influences the anatomy, physiology, susceptibility to pathogens, and morbidity of the host.

Normal flora may aid the host in several ways:

- ✓ Aid in digestion of food and produce vitamins eg, Vit. K
- ✓ Help the development of mucosal immunity.
- ✓ Protect the host from colonization with pathogenic microbes.

Significance of normal flora



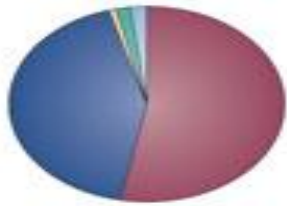
Factors influencing microbial flora

1. Local Environment (pH, temperature, redox potential, O_2 , H_2O , and nutrient levels...).
2. Diet
3. Age
4. Health condition (immune activity...)
5. Antibiotics,.....etc

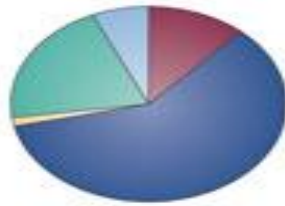
Distribution of normal flora in the body

- A. Skin
- B. Eye
- C. Mouth and nose
- D. Intestinal tract
- E. Urogenital tract

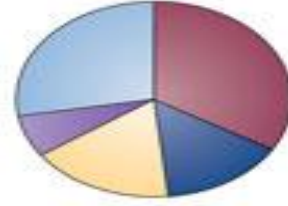
External auditory canal



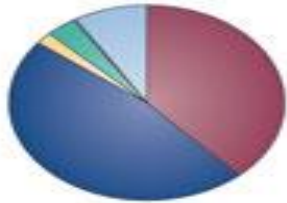
Hair on the head



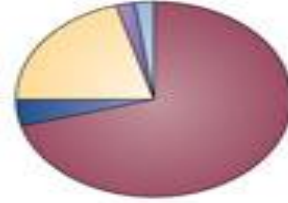
Mouth



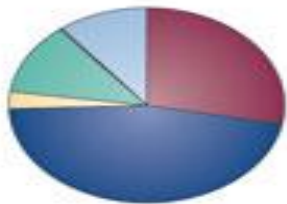
Nostril



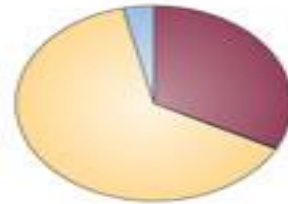
Oesophagus



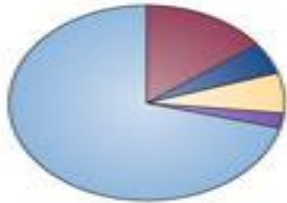
Skin



Gastrointestinal tract



Penis



Vagina

